

# **SESSION 4**

## **Pupils and Teachers**



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### Aims

- To introduce the idea of dyslexic strengths in addition to difficulties
- To recognise pupils' preferred learning styles
- To enhance understanding of multi-sensory learning
- To develop lesson planning to take account of specific learning difficulties

### Materials Required

#### OHTs

- 4.1 Left Hemisphere of the Brain
- 4.2 Right Hemisphere of the Brain
- 4.3 The Dyslexic Cognitive Style
- 4.4 Metacognition
- 4.5 Multi-Sensory Teaching

### Handouts

- 4.1 Multi-Sensory Teaching
- 4.2a The Visual Learner
- 4.2b The Auditory Learner
- 4.2c The Kinaesthetic Learner
- 4.3 Difficulties Facing the Poor V.A.K. Learner



# Tutor Notes

## Introduction

So far we have looked in some detail at identifying pupils with dyslexia and considered some teaching strategies that will overcome some of their specific difficulties. In this session we look at their strengths and weaknesses in a more systematic fashion so as to develop an approach based on Universal Curriculum Design rather than an approach based on supporting them as a 'disabled group.'

## Pupils with Dyslexia as Learners

Having considered the weaknesses / difficulties that affect the pupils with dyslexia, it is equally important to consider their strengths and abilities in order to understand their needs and to provide appropriate support.

We all have our preferred ways of working. Some of these are characteristic of all that we do – others are 'situation specific' and relate only to certain tasks or types of task. For instance, you may like to work co-operatively on your own. There is a current 'vogue' for having music playing in the background.

Discuss with course members which are definite positives and negatives for them.

Pupils with dyslexia may well be more sensitive to these conditions as their 'learning self-concept' may well be less than robust as we saw in Session 2.

As individuals we each also have a learning style (a cognitive style) that we prefer to use to organise and process information received to the brain in order to make sense of what is around us.

Our teaching methods tend to favour those who are able to process language or are able to sequence information when learning without difficulty. We tend to teach activities, for example, through the reliance of using verbal instruction and verbal information.

Pupils with dyslexia show difficulties with the processes involved in the **left hemisphere** (i.e. linguistic processing) and, therefore, tend to rely more on the **right hemisphere**. The emphasis for the dyslexic learner is, therefore, on a **learning style which is associated with the right side of the brain**.

**Put up OHT 4.1** followed by 4.2 and discuss the implications for teaching.

**Put up OHT 4.3** to consolidate the ideas coming from course members.

What sort of methods do course members prefer as teaching strategies? What type of methods does the National Curriculum and the Literacy and Numeracy Strategy advocate?

## **Metacognition**

Metacognition means understanding your own thinking. Not only are humans able to think, but they are able to think about their thinking. Therapists, management consultants and sports psychologists use metacognition by giving their clients ways both to understand their current 'faulty' thinking and techniques to develop 'better' ones. Specialist dyslexia teachers develop metacognitive approaches with their pupils during 1:1 sessions. A similar approach is taken in the Manchester Metropolitan University 'Multi-sensory Teaching System for Reading'. For example, when the pupil learns a new decoding technique – say for how to deal with an irregular word – the teacher will take them through the stages using both talk and a whiteboard – 'chalktalking.' They encourage the pupil to verbalise the steps themselves and to gradually internalise their speech until 'talking internally' becomes part of their repertoire of techniques. This is much the same as when one meets a particularly tricky problem (like putting together a piece of furniture from IKEA!) when one has to verbalise one's thinking ("now if this goes here and that sticks out through this hole, I can't get my hand over to put that nut on!")

Metacognition has been called the 'Seventh Sense' – it is concerned, not with learning, but with knowing how one personally, learns best. It is about being aware of personal strengths and weaknesses you bring to learning and problem solving. Put up OHT 4.4 and discuss some of the ideas above. Ask course members to share how they learn best. Consider different subjects, e.g. how best do you each learn:

- A foreign language
- A physical skill
- To find a new destination?

You may like to list the different ways on a chart.

Pupils learn best when they make a conscious choice about how to learn. Those who create their own memories do better than those they are provided with. Pupils who 'think aloud' whilst working remember more and make fewer errors. Pupils who do something as they learn attend better to the details and meaning of a stimulus and are likely to remember more.

Whilst being sensitive to both the emotional connotations of learning itself (and particularly the pupil's expectations of themselves through their self-esteem), and the preferred methods of learning, it is not sufficient for effective attainment.

Pupils with dyslexia also need teaching strategies that follow the principles of multi-sensory instructions.

Brahm Norwich calls using detailed attention to a pupil's learning style 'Intensive Teaching', a term he prefers to the more opaque 'Special Teaching'. It will enhance the impact of the teaching on all pupils and, therefore, can form the basis of Universal Curriculum Design. (See Supplementary Teaching Notes at the end of this section.)

### **Multi-sensory Instruction**

This is NOT the same as multi-media instruction, nor does it mean just bombarding the pupil with sights, sounds and touch in the hope that one or more will have an effect. It means the careful focussing of their attention on the sense modalities being used. The same message must be arriving simultaneously through each sense. You should also be clear whether you are trying to use preferred senses or strengthen or bring into use those less preferred.

The method is not new. James mentions it in his 'Principles of Psychology' published in 1890. Montessori developed it in her work early in the 20th Century, Fernauld used it with children with severe difficulties in the 1940's and Gillingham & Stillman brought it to bear on dyslexia teaching in the 1950's.

A good summary of the current position can be found in Chapter 1 of Birsch, 'Multisensory Teaching of Basic Language Skills'.

### **Put up OHT 4.5 and refer to Handout 4.1**

There are four main ways in which a pupil can receive information: Visual, Auditory, Kinaesthetic and Tactile.

She / he can see, hear, move and touch.

It is only rarely that we touch without moving and if we are speaking we must move the speech muscles. So most writers refer to 'kinaesthetic – oral' and 'kinaesthetic tactile'. However, as in **Handout 4.1** it is important for course members to recognise that what goes into each is a very clear, unambiguous 'signal'. A whiteboard should be cleaned of previous work before it is used and spoken words should be very similar to what is on the board and both to the point. Pictures should be unambiguous and with the subject either central or highlighted in some way. When the pupil says his/ her thinking out loud, this should also be precise. Rules are best learned through being spoken as they are used – for example spelling rules or letter formation. Handwriting can be practiced kinaesthetically by making the movements in the arm – 'arm writing' and these should be large movements using the preferred arm with the other hand holding the elbow so as to maximise the feeling of movement. Or again, writing can be practiced in a salt and sand tray with a finger so that both movement and touch are involved. The letter or word should always be said aloud at the same time so that all four senses are brought to bear on the one item – the letter or word.

Course members could each use **Handout 4.2** with their target pupil to see what their preferred style is. They should also look at **Handout 4.3** and consider the difficulties their target pupil has. Discuss how these may be taken into account in lessons and how this might benefit all pupils.

(See also Supplemental Tutor Notes on Universal Strategy at the end.)





## **SESSION 4:**

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## OHT 4.1

# Left Hemisphere of the Brain

Observes – particular aspects

Temporal – considers one aspect at a time

Analyses – breaks tasks down

Method – linear progression

Cause and effect – looks for meaning

Sequences – moves from A to B to C

Deduces – makes conclusions from a logical  
progression from the general to the particular

Language – uses language to name, define or describe

Signs – remembers complex motor sequences





## OHT 4.2

# Right Hemisphere of the Brain

Observes – the whole picture

Spatial – considers everything at once

Constructs – looks for a pattern

Method – Global approach

Relationships – looks for inter-relationships

Inductive – makes general conclusions from intuitive basis / sources

Pictures – uses pictures, shapes, colour

Design – thinks in design remembering complex images





### OHT 4.3

## The Dyslexic Cognitive Style

### **The Spatial Thinker**

Can use 3D in a creative way (e.g. engineers, architects)

### **The Inductive Thinker**

Is able to learn through practice experience and over learning as opposed to rules and regulations.

### **Concrete Learner**

Good at practical skills, a “hands-on approach”. Will find trying out an activity helpful before writing or reading about it or to investigate a topic rather than listening to information.

### **Intuitive Thinker**

Uses own personal knowledge, hunches and makes associations as part of the process of holistic thinking, rather than working through a systematic approach.

### **Visual – Spatial**

Can use “a form of thought in which images are generated or recalled in the mind and are e.g. manipulated or associated with other similar forms. They can be e.g. rotated, decreased or increased in size”.

### **Holistic Learning Style**

Uses a global approach to problem solving. Will find it necessary to have the overall picture as a guide to learning from the start and then will add detail in much later. Will use individual ‘props’ to aid understanding.









**OHT 4.4**

## **Metacognition**

### **THE SEVENTH SENSE**

The process of learning how to learn  
by reflecting upon how one learns as  
an individual

### **LEARNING TO LEARN**

The emphasis is place not so much on  
what is to be learned as on the processes  
of learning





## OHT 4.5a

# Multi-Sensory Teaching

Multi-sensory teaching involves simultaneous input from the visual, auditory kinaesthetic and tactile channels (referred to as V.A.K.T)

**The kinaesthetic mode** refers to muscular/motor movements, e.g. oral, physical.

**The tactile mode** to touching and feeling, e.g. with wooden letters or 3-D objects.

Many writers refer to tactile-kinaesthetic and oral-kinaesthetic. Naturally, when you touch something (tactile) you also move, so this is also kinaesthetic. However, it is important to recognise that the aim is to give the clearest sensation possible in that modality. Thus if using kinaesthetic the pupil should make big movements and if touching use the sensitive parts of the fingers.

Multi-sensory teaching uses all or selected sensory channels to make the necessary connections. It makes particular use of the oral channel with pupils being encouraged to verbalise as they learn.

Each sensory channel provides a unique way of perceiving and interpreting information.





**OHT 4.5b**

## **Example Teaching the Letters of the Alphabet**

<b>SENSORY CHANNEL</b>	<b>PERCEPTION</b>
VISUAL	Shape of letter
AUDITORY	Sound of letter
ORAL	Saying the letter sound and name
TACTILE	Feeling the shape of the letter
KINAESTHETIC	Writing the letter, word, sentence

Multi-sensory teaching aids the ability to recall and develop automaticity.

The approach combines the right and left hemispheres of the brain and therefore the pupil is able to utilise his / her strengths and develop the weaker areas.

Multi-sensory teaching is therefore particularly beneficial for teaching the dyslexic pupil. (It is also useful as it can aid other pupils within the class.)

It should be seen as an important feature within lessons, not as something that is added as an extra.





## **SESSION 4:**

### **List of Handouts**

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## Handout 4.1a

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## **Handout 4.2a**

# **The Visual Learner**

**The visual learner has the ability to learn through:**

- Recalling visual images
- A photographic memory
- Using pictures to aid learning
- Identifying information quickly using skimming and scanning to aid a process

**If activities are presented in the following ways, this will support the visual learner:**

- Well laid out handouts
- Practical demonstrations
- Video
- Mind maps
- Pictures
- Diagrams
- Colour coding
- Highlighting





## **Handout 4.2b**

# **The Auditory Learner**

**The auditory learner has the ability to learn through:**

- Listening (may need to be focused)
- Listening and selecting from information both given and received
- Grasp meaning from information that is given verbally
- Can recall what has been said

**If activities are presented in the following ways, this will support the auditory learner:**

- Poems
- Stories
- Dialogue
- Drama
- Mnemonics
- Tapes
- Repetition
- Discussions
- Explanations
- Presentations





## **Handout 4.2c**

# **The Kinaesthetic Learner**

**The kinaesthetic learner has the ability to learn through:**

- Working in 3D
- Making things
- Drawing things
- Develop ideas using concrete aids

**If activities are presented in the following ways, this will support the kinaesthetic learner**

- Excursions
- Tactile experience
- Making things
- Exploration
- 3 dimensional models
- Practical activities
- Demonstrations
- Explaining to another pupil / group







## **Handout 4.3**

# **Difficulties Facing the Poor V.A.K. Learner**

### **Difficulties facing the poor visual learner**

- Misreading words
- Reading aloud
- Confusion between similar words or letters
- Poor recall of visual images, e.g. pictures, patterns
- Confusion between similar images (as above)
- Miss out important details

### **Difficulties facing the poor auditory learner**

- Following instructions
- Sequencing oral instructions
- Poor recall of orally presented work
- Misunderstanding of oral instructions
- Distracted easily by sound
- Difficulty in sequencing events, e.g. historical sequences
- Difficulties in pronouncing multi-syllabic words

### **Difficulties facing the kinaesthetic learner**

- Dressing, e.g. tying shoe laces or fastening buttons
- Poor with 2-dimensional images
- Difficulty with 'hands on' practical activities
- Difficulty making things
- Poor motor control
- Poor drawing skills



# Supplementary Tutor Notes

## Principles of Universal Design

### Accessible teaching materials

Including dyslexic pupils does not mean mountains of additional work and will increase the quality of education for all pupils. Also, there is no reason why providing access to the curriculum for dyslexic pupils means a drop in standards. If anything it should lead to an increase in the ability of schools to respond to a population that is becoming increasingly diverse. Previously many teaching departments have responded to dyslexic pupils in a reactive manner resolving issues of access for individual pupils as the need arises. However, most teaching staff are likely to come across a dyslexic pupil in every class. Changes to legislation also mean that all sections of the school need to respond in a proactive manner, developing policies and provision for these pupils. Issues of access need to be considered from admissions, course design and assessment criteria to career opportunities and any work placements. We briefly examine here some of the issues relevant to course designers and describe some of the methods that will be useful in designing accessible course materials.

### Models

Recently, organisations of dyslexic people have forwarded an alternative definition and model of disability that focuses on the attitudinal, physical and societal barriers that restrict people with impairments from participating equally in all aspects of their lives (Oliver 1990). An example illustrates this approach - a person is dyslexic not by their impairment, but by the lack of teaching methods and materials appropriate to their needs. This model is known as the 'social' model and contrasts with a more traditional 'medical' model of disability which focuses on an individualistic approach - dyslexic people are often treated by an array of professionals and are seen to be helped to overcome the effects of their impairments by personal specialist teaching and support.

### Legislation

Recent legislation - the Special Educational Needs and Disability Act (SENDA) - means that schools now have:

- a duty not to treat a dyslexic pupil less favourably, without justification, for a reason which relates to their disability;

and

- a duty to make reasonable adjustments to ensure that pupils who are dyslexic are not put at a substantial disadvantage in accessing education.

This includes the teaching environment and covers aspects such as accessible materials, online learning delivery, teaching sessions and seminars and assessment methods. It is important, therefore, that academic staff take a lead role in the design of an accessible curriculum.

### **Assessment issues**

Debate and concern has arisen about the possibility of a drop in academic standards due to the provision of alternatives to the assessment methods and that these may lead to an unfair advantage for dyslexic pupils. Departmental staff can avoid some of these problems if they begin to think about assessment criteria at the course design stage. Assessment criteria should map onto learning outcomes and a variety of assessment methods should be used. When developing both assessment criteria and learning outcomes course designers should be absolutely clear about the purpose of the course, the necessity of the learning outcomes and teaching strategies and the necessity of the methods of assessing these learning outcomes (Scott 1997). If a clash occurs between the ability of the pupil and the course design it must not be because of unnecessary barriers to learning.

Additional support is often less controversial from an academic point of view. For example, most people are happy for a blind pupil to use assistive technology in an examination, or for someone with chronic pain to take breaks. However, these arrangements often cause concern for administrators because of the allocation of resources into areas such as providing separate rooms and the costs of assistive technology and additional invigilators.

### **Learning materials**

When designing accessible learning materials, course designers should consider access to the written word, visual images and the spoken word.

#### **Written word**

Many dyslexic pupils have difficulties accessing the written word. Perhaps the most useful aid to learning for these pupils is to produce copies of any learning materials on a computer disk. Most dyslexic pupils will have access to a computer with specialist software and they can use this to access the materials produced. If a pupil makes a specific request for large print the recommended size is at least 14 pt. Dyslexic pupils also benefit greatly from materials produced on coloured paper, generally a pastel shaded colour will help. Finally, try to use paper with a matt finish as this reduces glare. If you are producing written materials for the Web you should try to follow accessibility guidelines such as those produced by the W3C organisation.

## **Access to the spoken word**

Many dyslexic pupils are unable to follow lessons and take comprehensive notes at the same time. They may need to use a tape recorder or have a detailed handout, preferably in advance of the lesson. It is also important to keep any lesson structure sequential. Pupils with dyslexia may have sequencing difficulties and so will find lessons that do not follow a linear progression difficult to understand.

## **Universal Design**

Universal design is design that provides access to objects, technological devices, urban spaces and learning environments, for as broad a range of people as possible without the need for assistive devices or, where this is not possible, it is at least compatible with the use of assistive devices.

Designers often find that providing for disabled people has beneficial effects for a range of people e.g. a ramp has benefits, not just to people who are traditionally considered as mobility impaired but also to the elderly, children, people with prams and people delivering heavy parcels. The approach in the classroom has become known as universal design for learning. Orkwis (1999) has described this approach :

‘A more efficient way to provide pupil access is to consider the range of user abilities at the design stage of the curriculum and incorporate accommodations at that point. This ‘built-in’ access for a range of users, those with and without disabilities, is the underlying principle of universal design.’

If universal design is used dyslexic pupils will find that many of the adaptations to the learning environment that they often have to request, are already part of the overall instructional design. Many of these requests are for such things as untimed tests, notes, prepared materials before class, and study guides. As Silver et al (1998) note ‘such accommodations are typically helpful to all pupils, and in fact may be representative of effective instructional practices’.

Most teachers want all pupils to do well on their courses and want to be responsive to the needs of all their pupils. Universal design offers a way forward for us all.

## **References**

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This article has been adapted from a chapter that will be available in a series of books on Producing Quality Learning Material ed. F. Lockwood, Routledge Press.